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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,875

02/05/2004

Kenneth Wayne Boyd

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EXAMINER

BATAILLE, PIERRE MICHE

ART UNIT

PAPER NUMBER

2186

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/772,875

Applicant(s)

BOYD ET AL.

Examiner

Pierre-Michel Bataille

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4,7,10-12,14,15,20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8,9,13 and 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The present Office Action is taken in response to Applicant's communication filed January 10, 2007 responding to Non-Final Rejection dated. Applicant's amendments and/or arguments have been considered with the results that follow.

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 5, 6, 8-9, 13, 16-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 6, 8-9, 13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,546,536 (Davis et al) in view of US 7,051,173 (Tsuchiya).

With respect to claims 1, 8, 13, 16, and 18, Davis discloses system and method for shared data mirroring, comprising: a network comprising at least one host (**host processors 9a-9c**) and a plurality of storage devices (**storage subsystems 17a-17b**);

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at least one backup component; a data mirror comprising at least one primary volume and at least one secondary volume (***each storage subsystem include one or more disks forming shadow set of storage media accessible by one or more data sources***); and a processing node on the network, the processing node configured to record block address information (***each storage subsystem including controller configured to carry out management information relating to request commands***)[Col. 4, Lines 42-55], the processing node comprising: a response module configured to receive a tracking command and respond with status (***each storage subsystem including controller configured to receive command and to provide status in response commands***) [Col. 4, Lines 16-28]; an extraction module configured to extract block address information from the tracking command (***each command having associated information that uniquely identify the command and unit number that identifies the disk from which data is to be read or to which data is to be written***)[Fig. 2A, 2B; Col. 3, Line 57 to Col. 4, Line 7]; and a log module configured to record the block address information on a tracking log and transfer log and transfer the block address information to a location on the network tracking log (***a write history log that identifies information in the write history entry indicating the data blocks to which data has been written***) [Fig. 2A, 2B; Col. 4, Lines 43-55; Col. 6, Lines 46-67]. Davis fails to specifically teach extracting block addresses from the tracking log, organize a block address list from the extracted block addresses, read blocks of the block address list from the at least one primary volume, and write the memory blocks to the at least one secondary volume when the backup component

comes online. However, Tsuchiya teaches the log management unit recording the address information of backup data over which a written log, the log management device managing original data before a write access occurs as a log including recording a time of the log; blocks to be backed up are listed to be copied in the backup medium as a batch; backup system performs the backup process of the storage medium in a time series with proper timing; and a block management unit controlling the blocks of a backup file to be backed up on disk, and the copy management unit copies those blocks in the backup medium so that a backup process is performed when the backup device becomes online [abstract; Fig. 5, 15; Col. 2, Lines 16-40]. Therefore, it would have been obvious to one of ordinary skill in the art, having both systems before him at the time of the invention to combine the backup log device with the method of sharing backup data because the result would have provided that all the contents of disk are copied in the medium used for backup process ensuring that logs of a plurality of computers are merged at the time of a backup process.

With respect to claims 2-3, 5, 6, 9, 16-17, and 19, Davis discloses the system and method wherein the tracking log comprises at least one bitmap [Fig. 2A & 2B; Fig. 5A & 5B; Col. 2, Lines 24-32]; Davis discloses the system and method wherein the block address information further comprises metadata [Fig. 2A & 2B; Fig. 5A & 5B; Col. 2, Lines 24-32]; Davis discloses the system and method wherein the block address information further comprises time and date information [the information being set over a period of time Col. 2, lines 29-32]; Davis discloses the system and method wherein

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the log module is further configured to read a tracking log and tracking log information in both first and second storage subsystems [Col. 4, Lines 32-41; Fig. 2A & 2B; Fig. 5A & 5B]; Davis discloses the system and method wherein the log module is further configured to transfer information from the tracking log to the network [Fig. 2A & 2B; Fig. 5A & 5B; Col. 2, Lines 24-32]; Davis discloses the system and method wherein the processing node further comprises a restoration module configured to read memory blocks identified by information within the tracking log [Col. 8, Lines 3-14].

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,938,135 (Kekre et al) teaches incremental backup of a data volume recording log contents.

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Michel Bataille whose telephone number is (571) 272-4178. The examiner can normally be reached on Mon-Fri (8:00A to 4:30P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew M. Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Pierre-Michel Bataille
Primary Examiner
Art Unit 2186

PIERRE BATAILLE
PRIMARY EXAMINER